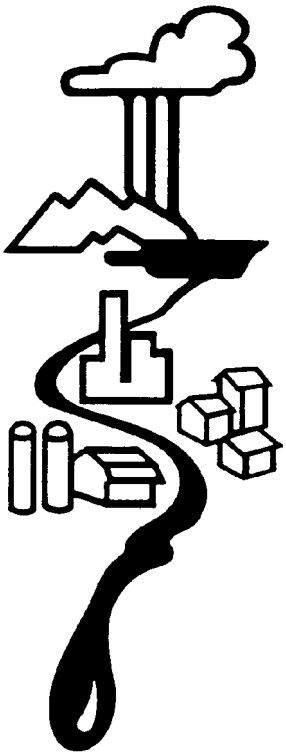
1.0 INTRODUCTION

Mercury is a persistent, bioaccumulative, toxic pollutant. Exposure to mercury can cause numerous harmful effects in plants, birds, mammals and humans. When released into the environment, even small quantities of mercury accumulate in the sediments of water bodies, are ingested by and bioaccumulate in animals and fish, and are passed up the food chain. Mercury deposited in water bodies is easily converted to methyl mercury, a particularly toxic form of mercury, in sediments. Since methyl mercury accumulates in the tissues of fish and animals, it is readily transmitted through the food chain, up to and including humans.

As a result, mercury contamination in the environment is a significant public health and environmental problem. Federal and state governments, as well as the private sector, have taken many steps to reduce releases of mercury to the environment. Recently, New Hampshire participated in a cooperative effort to develop a *Regional Mercury Action Plan* under the auspices of the Conference of New England Governors and Eastern Canadian Premiers (*NEG/ECP, June 1998*). The regional action plan calls for the "virtual elimination of man-made mercury releases" and the recommendations detailed in the plan should result in substantial mercury reductions over the next several years. In New Hampshire, mercury reduction efforts have included eliminating mercury in batteries and product packaging, promoting the recycling of mercury-containing wastes and prohibiting the use of pesticides that contain mercury. Despite these efforts, mercury is still being released and deposited in quantities significant enough to threaten public health and environmental quality. Because mercury concentrations in fish continue to be at levels of concern, New Hampshire and many other states have issued advisory warnings cautioning against too much consumption of freshwater fish (see Section 3.1.1).



Distant upwind sources of mercury are an important factor in the Northeast's mercury deposition problem. Mercury emitted into the air can be transported great distances by prevailing winds. Much of it is then washed out of the air by precipitation and deposited on land and into water bodies. This airborne mercury, combined with sources of mercury within New Hampshire and the Northeast, results in increased mercury levels in fish and wildlife. Sources in the Midwest such as coal-fired power plants are significant contributors to mercury deposition in the Northeast. In recognition of this, the Environmental Protection Agency has recently requested that coal-fired utilities provide additional data on their mercury emissions. This information will be used to better determine the actual contribution of mercury from this source. Other recent federal efforts include several pieces of proposed legislation ranging from reducing mercury in products to requiring sources to do more mercury emissions monitoring.

Based on analyses conducted by the New Hampshire Department of Environmental Services (DES) and others, it is apparent that in-state sources also contribute significantly to the problem of mercury contamination. New Hampshire needs to take a strong leadership role in reducing mercury emissions from in-state sources, in order to achieve reductions in the regional mercury emissions inventory and reduce mercury transport to areas further downwind. Addressing sources within the state will also enhance New Hampshire's ability to seek reductions by sources outside of the state and region.

This report -- ***The New Hampshire Mercury Reduction Strategy*** -- describes and details steps that the State of New Hampshire intends to take in order to reduce mercury pollution in the State. It provides a summary of the public health and other impacts of mercury contamination, lists sources and pathways by which mercury enters the environment, and recommends actions that should be taken to reduce the amount of anthropogenic (man-made) mercury emitted into the environment. ***The actions recommended in this strategy are expected to achieve at least a 50% reduction in mercury releases from New Hampshire sources by 2003.*** The DES, in conjunction with other agencies and organizations, will continue to work toward the virtual elimination of anthropogenic mercury releases by seeking solutions for those mercury sources that do not currently have feasible emission controls or reduction methods available.

CASE STUDY

Commercial Pesticides

The New Hampshire Pesticides Control Board has placed all mercury-containing pesticides on the prohibited use list, which means they can not be used in New Hampshire. This action is more restrictive than other state or national initiatives, in which products are being phased out, but product on the shelf can still be used. As of December 31, 1996, mercury-containing pesticides can not be used in New Hampshire.